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*March 20th.*

Mr. LEA, President, in the Chair.

Forty-two members present.

The following papers were presented for publication :

"Descriptions of new species of Cretaceous Fossils from New Jersey, by W. M. Gabb."

" Description of four new species of Melanidæ of the United States, by Isaac Lea."

"Description of five new species of Uniones from Alabama, by Isaac Lea."

And were referred to Committees.

Dr. Leidy announced the presentation by Dr. T. B. Wilson of his entire collection of birds, amounting to 26,000 mounted specimens, and 2,000 skins.

Mr. Cassin said, in relation to the presentation of the collection of birds now in the Museum of this Academy, by Dr. T. B. Wilson:

The collection of birds in the Museum of the Academy has been regarded for some years as the collection of this Academy, and is extensively known and referred to as such by authors and naturalists. The donation this evening, so liberally and characteristically made by Dr. Wilson, involves only a change of ownership, or transfer of title, with the further important consideration that it secures the collection to the Academy, as intended by Dr. Wilson, in perpetuity and without contingency.

Previous to this donation the collection has been the private property of Dr. Wilson, and has been accumulated from various sources, since 1845, with great judgment, and with constant and unremitted exertion on his part and also on the part of his brother, Mr. Edward Wilson, long resident in Europe. The latter named gentleman has most ably and successfully seconded his brother in the greatest enterprises ever entered upon in America, having for their object the promotion of the Zoological Sciences and of general Natural History. The results mainly have been, at this period, the formation of the Library of this Academy and of its collections in all departments, but especially in Mineralogy, Palæontology, Conchology, Crustacea, Icthyology and Ornithology.

The very extensive and comprehensive series now presented, with the comparatively small collection previously owned by the Academy, comprise one of the most complete Ornithological Museums extant. It is, in fact, one of the four great collections of birds in the world, and, so far as can be ascertained from published catalogues, is fairly entitled to be considered as presenting facilities for study in this favorite branch of Natural History equal to those of any other Institution.

Mainly, the collection of Dr. Wilson was based on that of General Massena, Duke of Rivoli, and his son, M. Victor Massena, Prince D'Essling, which was regarded as the finest private collection in Europe. This was acquired by purchase in 1846, and brought to this country. Various other valuable and more or less extensive collections have been added since that period, including Mr. Gould's Australian birds, which are the types of his great work, "The Birds of Australia," and embracing all the species then known, except five only. Another important collection, mainly Parrots, Humming Birds and Tanagers, was that of M. Bourcier, a distinguished French Ornithologist, and quite equally so was a collection made in the interior countries of India by Capt. Boys, of the East India Company's service. Very important, too, are collections from the Leyden Museum, through the influence of the eminent naturalists now or lately attached to that great Institution, particularly the celebrated Temminck, and many others obtained in Europe through the faithful and judicious exertions of Mr. Edward Wilson for the interests of this Academy.

Numerous other smaller additions have been made, whenever opportunity presented, in this country, by Dr. Wilson, and also have been derived from European Naturalists by exchange and purchase to the extent of several thousand specimens. Messrs. Verreaux, the well-known commercial Naturalists and Ornithologists of Paris, have been of exceeding service, and but little less so has been Mr. John G. Bell, of New York, the principal commercial Naturalist in this country, whose high interest in the prosperity of the Academy and scientific knowledge has never failed to be exerted and always has been of great value in the extension of the collection. Mr. John Krider, Mr. William S. Wood and Mr. James Taylor, of this city, have also furnished to Dr. Wilson many valuable specimens, and all of these gentlemen have invariably shown the utmost cheerfulness and liberality in their business with the Museum of the Academy.

The collection now presented by Dr. Wilson has been derived from the following sources, and includes specimens nearly as here enumerated:

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|---|---|---|
| Rivoli collection, 1st purchase, - - | 12,500 | specimens. |
| do. do. 2d do. - - - | 2,500 | " |
| Mr. Gould's Australian collection, - - | 2,000 | " |
| M. Bourcier's collection, - - - - | 1,000 | " |
| Capt. Boys' collection, - - - - | 1,000 | " |
| Mr. Edward Wilson's collections in Europe, including collections from the Leyden and British Museums, - - - - - - - | 4,500 | " |
| Dr. Thos. B. Wilson's collections in Europe, | 1,000 | " |
| do. do. do. in the U. S., | 1,500 | " |
| Total now presented to the Academy, | 26,000 | " |

It may be of interest to add that the collection previously owned by the Academy comprises about 3000 specimens, including a very superior North American series derived from nearly all ornithologists in the United States, who have invariably shown the greatest interest in the formation of the large collection of this Academy. The aggregate number of specimens exhibited and now belonging to the Academy is therefore about twenty-nine thousand birds.

Mr. Lea read extracts from letters of Dr. Lewis, of Mohawk, New York, on the subject of the coloring matter of the nacre of the genus *Unio*, and exhibited some fine specimens to illustrate the subject. The following extracts will fully convey Dr. Lewis's ideas on this subject which has much interest with the naturalist.

"I hinted something about *Uniones* being colored with an oxide or salt of gold. My reasons for this are derived from observing some singular phenomena in colors on submitting shells to the action of chloride of gold, and then bringing them in contact with tin. Whether a stannate of gold formed and precipitated on the shells or not, I cannot say, but the colors were very much intensified. It is to be remarked that the colors of such shells as *Unio complanatus* and of *U. ligamentinus*, when colored, are such as result from the presence of gold in a state of atomic division and dissemination in a semi-opake body. I think nitro-muriatic acid with a minute trace of gold in it, if applied to shells, will produce *colors*, but I never have satisfactorily demonstrated this. My observations are derived from having once used acid in which was a small quantity of gold, too small to be reclaimed."

"I notice that colors are most brilliant in regions where gold may be suspected. In the Lake regions of the Western States, minerals are abundant, and the conditions are not incompatible with the supposition that gold is sparingly disseminated among them, in quantities too small perhaps to be available, *but no doubt it is there.*"

"As regards *colors* in the *nacre* of *Uniones*, you are correct in saying that Uniones *are colored where there is no gold.* But there are some species that are *not* colored unless you find them in some particular localities. If that is taken into consideration we shall, perhaps, be more ready to accept the *gold* theory. Modern investigations show that gold exists in soils that, until they were rigidly tested, were not suspected to contain it. In fact I am disposed to believe that gold is more universally disseminated than is generally supposed."

"But, the question is one I take no particular interest in, except that it presents itself incidentally. I know one fact that you also know. That of two streams producing identically the same species, one will give a large proportion of white nacres, and the other will present *colored* nacres, and usually we also notice another phenomenon—*a greater brilliancy* of nacre where rich colors abound. In this case I have my *private opinion* that gold produces its peculiar *tonic* effect, for *tonic* it is under certain circumstances by increasing the secretions."

"To have gold in a shell, it is not necessary it should be an oxide. It is only necessary it should have been received into the circulation of the animal, in solution as *chloride*, or some other possible soluble form that chemistry has not brought to light; and when once in the circulation it may be eliminated by being deprived of its solving principle and excreted or secreted with the other solid matter that enters into the formation of the shell. The stannate of gold, or purple of Cassius, may be wholly deprived of the tin associated with it, yet retain its purple color, and its condition of atomic division, if so you are pleased to call it. But I only offer this as suggestive of something for those interested to follow further. I am not enough of a chemist to develop any facts out of a suspicion of this kind."

Mr. Lea remarked, after reading the above extracts, that the *purple, pink and salmon* color of many of our American *Unionidæ* had had his attention from the period of his first studying this beautiful and interesting family, more than thirty years since. Without having experimented himself upon them, he was aware that no chemist had been able to detect the presence of a metal or other elementary body. He therefore thought it likely to be caused by the presence of some organic body which had not yet been detected; such is supposed by chemists to be the case with the colored fluates of lime, colored quartz, &c. What Dr. Lewis states as regards the colors being more frequent and more intense in the waters of Michigan and in the streams leading into the northern great lakes from the southern side, is very true. The *Unio rectus* is usually white in the Ohio, though sometimes tinted with purple and salmon color, while in the more northern waters it is usually of a fine rich purple or salmon. Two specimens from the upper Mississippi, brought by Dr. Cooper, were exhibited by Mr. Lea, which were of exquisite purple and salmon. The *Unio ligamentinus* has probably never been found pink or purple in the Ohio, while at Grand Rapids, Michigan, those with a fine pink and salmon color are very common. The *Margaritana margaritifera* of Columbia river and its tributaries has a fine purple nacre in almost all the specimens, rarely white, while those in the rivers of Pennsylvania, Connecticut and Massachusetts are almost universally white, as those from the northern part of Europe are also.

Dr. Draper had informed Mr. Lea that he had calcined some of these purple shells, but that they had burned white and he had not detected any metallic subtance in their composition. The subject was certainly one well worth the pursuit, as no doubt could remain that the color was derived from some foreign substance entering into the composition of some individuals, while others were free from it. It was not an uncommon case to find the dorsal portion of the nacre to be pink or purple while the other portions were white, and this was also sometimes the case with the cavity of the beaks. Mr. Lea did not believe the color arose, as some persons supposed, from the structure of the surface of the nacre dividing the rays of light by thin laminations. This division of color was exhibited in almost every species, and is what naturalists call the "pearly hue," oftentimes of great beauty, but quite a different matter from the pink, purple and salmon color of the mass of the carbonate of lime composing the substance of the valves.

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## *March 27th.*

Mr. LEA, President, in the Chair.

Forty-eight members present.

The following papers on report of the respective committees were ordered to be printed in the Proceedings:

### Descriptions of Four New Species of UNIONIDÆ from Brazil and Buenos Ayres.

BY ISAAC LEA.

UNIO TRIFIDUS.—Testâ lævi, obliquo-oblongâ, ad laterè planulatâ, valdè inæquilaterali, posticè acutè angulatâ, anticè rotundâ; valvulis crassiusculis, anticè crassioribus; natibus prominentibus, ad apices rugosè et divaricatè undulatis; epidermide micante, luteo-viridi, eradiatâ; dentibus cardinalibus grandibus, trifidis, sulcatis; lateralibus longis, crenulatis, in valvulo dextro trifidis; margaritâ argenteâ et iridescente.

*Hab.*—Buenos Ayres, South America. M. D'Orbigny.

UNIO PATELLOIDES.—Testâ lævi, subrotundâ, subcompressâ, subæquilaterali, anticè et posticè rotundatâ; valvulis subcrassis, anticè crassioribus; natibus prominulis, ad apices divaricatè undulatis; epidermide tenebroso-castaneâ, striatâ, eradiatâ; dentibus cardinalibus longis, compressis, obliquis, crenulatis corrugatisque; lateralibus longis, crenulatis curvisque; margaritâ argenteâ et iridescente.

*Hab.*—Amazon River, Brazil. Captain George Brown. Rio Plata. H. Cuming.

ANODONTA AMAZONENSIS.—Testâ lævi, transversâ, subinflatâ, valdè inæquilaterali, posticè subbiangulatâ, anticè rotundâ; valvulis subcrassis; natibus